

Red-ALERT 2025/6 Living Lab Challenges

<p>Cam & Wellow Living Lab</p>	<p>The Challenge: Cam/Wellow water quality suffers from high nutrient levels, organic contaminants and biodiversity loss. Lack of comprehensive data/evidence collection tools enabling better understanding of environmental burden from all catchment users (communal, agricultural and industrial) is the key challenge in establishing effective interventions to achieve good ecological status of Cam & Wellow catchment.</p> <p>Project co-creation: Cohort 2 will work with RED ALERT Partners to develop tools (omics, sensors, IoT) aimed at establishing a digital One Health Platform that will be transferable and tested in other Living Labs.</p>
<p>Conwy Living Lab</p>	<p>The Challenge: The Conwy River, estuary and coastal zones suffer from severe microbial pollution from agriculture, wastewater, septic tank and hospital discharges. Contamination has been causally linked to disease outbreaks (e.g. Norovirus, Hepatitis) via water-based recreation and shellfish consumption. Finding new ways to monitor pathogens, model their dispersal/fate and predict human exposure risk is a major challenge.</p> <p>Project co-creation: Cohort 2 will work with RED ALERT Partners to test new omics-based approaches to pathogen surveillance, develop new AI-driven pathogen exposure risk modelling tools, identify how extreme events will affect future water quantity and quality.</p>
<p>Taff & Ely Living Lab</p>	<p>The Challenge: Pollutant concentrations in Cardiff Bay which receives water from the Taff and Ely, reflect how multiple inputs of pollutants aggregate as the river flows to the sea. Little is known on how pollutant concentrations vary from source to sea.</p> <p>Project co-creation: Cohort 2 will work with RED ALERT Partners to understand how catchment land use and activities affect pollutant concentrations from source to sea. These will include transport activities (e.g. metals), domestic wastewater (e.g. pharmaceuticals) and farming/gardening (e.g. pesticides).</p>
<p>Exe, Tamar & Dart Living Lab</p>	<p>The Challenge: There are poor water quality issues (coliform/pathogen counts and agro-chemicals) associated with discharges into the Exe, Tamar and Dart which impact the local shellfish industries, bathing water quality and biodiversity.</p> <p>Project co-creation: For Cohort 2 projects will need to be developed with RED-ALERT Partners, and apply tools such as chemical analysis, molecular sequencing (e.g. to assess microbiological content) , bioassays (with e.g. invertebrates and fish), in-field ecological analyses and/or modelling to assess the impact of waste, including CSO, treated effluent and surface water run-off on invertebrate/fish populations across the chosen catchment.</p>